

**IN THE CLAIMS:**

1-6 (canceled)

7. (currently amended) In a method for the non-vacuum electron-beam welding of metallic materials, the improvement being in using a protective gas consisting of a ~~cold~~ gas having a temperature less than ambient temperature.
8. (previously presented) The method of claim 7, characterized in that the metallic materials are light metals.
9. (currently amended) The method of claim 7, characterized in that the ~~cold~~ gas is an inert gas.
10. (currently amended) The method of claim 7, characterized in that the ~~cold~~ gas is a low-reactivity gas.
11. (new) The method of claim 10, characterized in that the gas is nitrogen.
12. (new) The method of claim 9, characterized in that the gas is helium.